

PTO 03-3264

Japanese Kokai Patent Application
No. Hei 4[1992]-194064

PACKAGING MATERIAL FOR HAM, SAUSAGE, ETC.

Masakazu Yamamatsu and Katsumi Takemori

UNITED STATES PATENT AND TRADEMARK OFFICE
WASHINGTON, D.C. MAY 2003
TRANSLATED BY THE RALPH MCELROY TRANSLATION COMPANY

JAPANESE PATENT OFFICE
PATENT JOURNAL (A)
KOKAI PATENT APPLICATION NO. HEI 4[1992]-194064

Int. Cl. ⁵ :	D 04 H 1/46 A 22 C 13/00 B 32 B 5/02 5/06 5/08 5/26 B 65 D 65/04 D 04 H 1/46
Sequence Nos. for Office Use:	7332-3B 6926-4B 7016-4F 9028-3E 7332-3B
Filing No.:	Hei 2[1990]-320743
Filing Date:	November 27, 1990
Publication Date:	July 14, 1992
No. of Inventions:	2 (Total of 6 pages)
Examination Request:	Not filed

PACKAGING MATERIAL FOR HAM, SAUSAGE, ETC.

[Hamu, soseji nado no hoso zairyo]

Inventors:	Masakazu Yamamatsu and Katsumi Takemori
------------	--

Applicant:	Towa Chemical Co., Ltd.
------------	-------------------------

[Attached amendments have been incorporated into the text of the translation.]

Claims

1. A type of packaging material for ham, sausage, etc. characterized by the fact that it is prepared by overlapping a cloth and strings, net, or the like and interweaving their fibers with each other by means of needle punching, high-pressure water flow jet, or other mechanical means.

2. A type of packaging material for ham, sausage, etc. characterized by the following facts: said packaging material is a 3-layer laminate prepared by overlapping a layer of strings, net, or the like on a cloth, followed by overlapping another cloth; their fibers are interwoven with each other by means of needle punching, high-pressure water flow jet, or other mechanical means so that said layers are integrated with each other.

Detailed explanation of the invention

Industrial application field

This invention pertains to a type of feed material for use as a casing (packaging material) for ham, sausage, etc.

Prior art and problems to be solved

In the prior art, when meat of livestock animal or fish is processed to ham, sausage, etc., in order to form the desired shape of the meat, collagen casings extracted from the glue contents of the animals and fibrous casings prepared by processing plant fibers are used.

In the method for processing ham, sausage, etc., pieces of meat from livestock are prepared in a prescribed shape and the meat is then filled in an internal organ or said collagen casing or fibrous casing, followed by drying in warm air, drying in smoke, cooking in steam or hot water, or a combination of said treatments. In this way, the meat is cooked and formed to the prescribed shape.

In the recent years, in order to improve appearance of the ham, several methods have been proposed. In one method, meat is filled in a cylindrical net to have a prescribed shape. In another method, strings are applied on the meat in the prescribed shape, followed by the aforementioned treatment to finish to get the ham, sausage, etc.

However, when a net or strings are directly applied on meat to form the shape for cooking, the obtained ham has said net or strings penetrating into the meat. Consequently, it becomes hard to peel them off from the ham.

* [Numbers in the margin indicate pagination in the foreign text.]

Also, in this case, when the net or strings are separated, the surface of the ham may be peeled off.

In addition, this [prior art] invention cannot be used in preparing sausages from ground meat as the feed material. This is undesirable.

In order to overcome the aforementioned problems, that is, difficulty in separating the net or strings from the ham and damage to the ham surface in the separating operation, and to improve appearance of the sausage products by applying net or strings, the following method has been proposed: a packaging material is prepared by forming a cylindrical shape of said internal organ, collagen casing, fibrous casing, cellophane, paper product, or cloth on the inner side of a cylindrical net; and meat in a prescribed shape or ground meat is filled in said packaging material.

In another method, meat is filled in said internal organ, collagen casing or fibrous casing, or meat is wrapped with cellophane, paper product, or cloth, followed by applying of net or strings to form the desired shape and then cooking.

However, the aforementioned methods have their disadvantages. For the method in which internal organ or other casing feed material is assembled on the inner side of a cylindrical net, and meat is then filled in it, it is difficult to assemble the casing feed material on the inner side of the cylindrical net, and the operation has a very poor efficiency. Also, when meat is filled, the meat may enter between the net and the internal casing feed material, or the casing feed material inside the net may be kinked. Consequently, one has to perform the filling operation carefully, and the efficiency becomes poor. On the other hand, for the method in which net or strings are applied after meat is filled in internal organ or other casing feed material, as the meat has to be packaged twice, a lot of man-hours are needed for the shaping processing, and the efficiency is poor.

In another method proposed to solve the aforementioned problem, a casing prepared by integrating a thin casing with strings or net beforehand is used. For example, a nylon knitware is wound on a plastic cylinder, followed by adhering a net on it and then treatment with collagen or viscose to integrate them with each other. However, this method is a non-continuous (patch) method, so that quality control is difficult to perform, and the productivity and efficiency are poor.

On the other hand, Japanese Kokoku Patent Application Nos. Sho 58[1983]-22178 and Sho 62[1987]-1691 described a method in which yarns are bonded with a porous paper by means of viscose, and Japanese Kokai Patent Application No. Sho 60[1985]-27332 described a method of integration (bonding) between net and film. However, in these methods, a high level of quality control is needed for bonding the deformation-prone yarns or net on the base material, leading to a decrease in the productivity.

Also, Japanese Kokai Utility Model Application No. Sho 61[1986]-176286 described a method in which strings are knitted from synthetic fibers. However, this method has the disadvantage of a low production rate.

As explained above, it is not easy to integrate a thin casing feed material with strings or net while maintaining food hygiene. At present, one has to perform this operation with great care and at a very low efficiency.

Means to solve the problem

The present invention provides a type of packaging material of ham, sausage, etc. characterized by the fact that it is prepared by overlapping a cloth and strings, net, or the like and interweaving their fibers with each other by means of needle punching, high-pressure water flow jet, or other mechanical means.

Also, this invention provides a type of packaging material for ham, sausage, etc. characterized by the following facts: said packaging material is prepared by overlapping a layer of strings, net, or the like on a cloth, followed by overlapping another cloth, preferably fiber web or nonwoven fabric; their fibers are interwoven with each other so that said layers are integrated with each other.

Operation

For the packaging material of the present invention, without using an adhesive, cloth fibers and strings or net are interwoven with each other with said mechanical means, so that they are integrated to each other at a high strength.

Also, a clear pattern of said strings or net is formed on the surface, so that the appearance is good. In addition, as said strings or net with decorating function is interwoven reliably with the cloth, processing operation can be carried out easily. For example, in a step of manufacturing of the casing, in which viscose or other saccharides or collagen or the like is used for dipping or coating, the operation can be carried out continuously at a high stability. /3

In addition, the casing formed in the present invention is a porous material with good permeability of smoke (for smoking processing), and strings or net as strength members, so that the casing has a sufficiently high strength.

Application examples

In the following, this invention will be explained in more detail with reference to application examples illustrated in the figures.

Figure 1 is an oblique cross-sectional view illustrating an example of packaging material (1) in the present invention. Figure 2 is a cross-sectional view taken across A-A.

Said packaging material (1) is a laminate prepared by interweaving fibers of cloth (2) and strings or net (3), followed by coating with cellulose.

Types of cloth include knit or woven cloths, paper, nonwoven fabric, web prepared by forming fibers in sheet shape, etc. Examples of fibers for forming said cloth include cotton, rayon, Bemberg (commercial name), acetate and other cellulose fibers, as well as polyester, polyamide, polyolefin fibers, and other fibers.

As the packaging material of this invention is processed with viscose, in consideration of the affinity with viscose, it is preferred that cellulose based fibers be contained in the mixture.

Also, the weight per m^2 of the cloth should be less than 300 g. If the basis weight is over 300 g, permeability of smoke degrades for the casing. Consequently, the basis weight per m^2 is preferably in the range of 5-100 g.

On the other hand, strings or net used in the invention of this patent application may be prepared from various types of fibers. Also, they may be prepared by splitting a film or forming plastic molding products to string or net shape.

According to this invention, the strings or net is prepared from cellulose yarns, polyolefin based material, polyamide based material, polyester based material, etc. Especially, it is preferred that it contain 10% or more feed material with moisture content of 7% or less, as this enables high-efficiency drying at a low cost when cellulose processing is carried out.

In addition, it is highly effective for improvement of appearance of casing by coloring, such as dyeing, etc., the strings or net before they are integrated to the cloth.

Also, one may adopt various means to overlap and integrate strings or net with the cloth.

For example, one may adopt the following method: the cloth and the strings or net are released simultaneously from separate rollers, and they are continuously overlapped with each other, and needle punching is performed from the side of the cloth, or a high-pressure water flow jet is applied from the side of the cloth as described in Japanese Kokoku Patent Application No. Sho 47[1972]-18069, so that the fibers that form the cloth and the fibers that form the strings or net are interwoven with each other (see Figure 2).

In this case, when a web prepared by forming fibers in a sheet form is used as the cloth, the packaging material of this invention can be obtained easily.

In another application example, strings or net is to be integrated with the cloth with even higher strength. In this application example, packaging material (1) shown in Figures 3 and 4 is prepared by overlapping cloth (2) with strings or net (3), and overlapping strings or net (3) and cloth (4) (preferably a web or a nonwoven fabric as the cloth) and interweaving their fibers with each other by means of needle punching or preferably a high-pressure water flow jet not shown in the figure or other mechanical means to form an integrated body.

Also, in order to integrate cloth (4) (web or nonwoven fabric) overlapped on strings or net (3) at a high efficiency, one may make use of short fibers to form them. In consideration of the appearance of the commodity, it is preferred that the covering power (thickness) not cover and hide the presence of strings or net.

For this purpose, the basis weight of the web should be 90 g/m^2 or lower, or preferably 30 g/m^2 or lower. Also, one may form the packaging material of the invention of this patent application [with basis weight] of a few grams [per m^2].

Also, according to this invention, one may overlap two layer of different types of cloth for use, or overlap two types of nets for use. These methods can be derived easily from the method of this invention, and they are also included in this invention.

Then, the packaging material of this invention prepared by integrating cloth with strings or net is treated using a conventional method with collagen or other animal-based composition, viscose (cellulose) or other polysaccharides, as well as the synthetic resin composition described in Japanese Kokoku Patent Application No. Sho 55[1980]-45164, etc. so as to improve the separating property between the casing and the packaged processed food (meats). Then, the packaging material can be used as casing for ham, sausage, etc. A typical method for treatment to improve the separating property is processing with viscose.

In a conventional method, viscose is prepared as follows. First of all, pulp is dipped in caustic soda to form alkaline cellulose, which is then made to react with carbon disulfide to form xanthate. The obtained xanthate is made thinner with a thin solution of caustic soda to obtain viscose. Said sheet is dipped continuously in said viscose, or viscose is coated on the sheet with a roll coater. Then, after treatment using sulfuric acid or other acidic solution, water washing is performed. After water washing, it is dried in hot air or using a canned drier or the like. Also, just as in the case of viscose processing, one may also make use of cellulose solution obtained using copper ammonium method or the like for the purpose of this invention.

In the following, this invention will be explained in more detail with reference to application examples. However, this invention is not limited to these application examples.

Application Example 1

A net was prepared as follows. 250 denier/48 filament nylon filaments with normalized moisture content of 4.5% were paralleled and twisted to form strings of about 5000 denier. The strings were used as warps and wefts to form a net with 30-mm meshes by means of Raschel knitting. The net was dyed brown.

On the other hand, a plain woven cloth with basis weight of 51 g/m^2 was prepared using 25 warps/inch and 25 wefts/inch of cotton yarns.

Said net and cloth were continuously overlapped with each other. Then, a card web with basis weight of 7 g/m^2 and prepared from 1.5-denier 38-mm rayon fibers and overlapped continuously on said net.

That is, a 3-layer laminate with net sandwiched between the cloth and web was obtained.

Then, with pitch spacing of 1 mm, a high-pressure water flow jet was applied from a 0.2-mm-diameter nozzle on the rayon web side in 4 steps, in which the hydraulic pressures were set at 10 kg/cm^2 , 30 kg/cm^2 , 50 kg/cm^2 , and 70 kg/cm^2 . The treatment speed was 10 m/min.

In this way, after the high-pressure water flow jet treatment, the 3-layer laminate has the rayon web fixed on the cloth reliably.

10 The obtained sheet was dipped in a viscose bath composed of 8% cellulose and 6% caustic soda. After squeezing, it was pickled with a solution prepared from sulfuric acid and sodium sulfate, followed by water washing. Then, drying was performed to remove moisture by means of a canned drier with the surface temperature at about 100°C . The nylon net portion was also dried at a high efficiency. After drying, 8 g/m^2 of cellulose was coated on the sheet.

With the cloth as the inner side, the obtained net-applied sheet was sewn to form a cylinder as a casing for ham. When meat was filled in it ... [missing text]...

The net prepared in Application Example 2 was laminated with a nonwoven fabric, and needle punching was performed at a punching density of 36 punches/cm^2 from the side of the nonwoven fabric. The net and the nonwoven fabric were integrated with each other.

Then, the same operation as in Application Example 1 was carried out, and the same effects as those in Application Example 1 were obtained.

Effect of the invention

This invention provides a type of packaging material, which has good smoke permeability for smoking processing, a high strength and an attractive appearance, and which can be used as packaging material, such as casing for ham, sausage, etc., at a high efficiency.

In the prior art, ham, sausage, etc. are manufactured in a packaging state by means of strings or net for covering them. As described in said section of Prior art, after the ham, sausage, etc. are packaged with a thin casing, strings or net must be applied in another step of operation. This makes the method complicated. In another conventional method, a casing prepared by integrating a cloth and a net or the like at a very low efficiency is used. In both methods, the productivity is poor.

On the other hand, according to the present invention, a packaging material attached with strings or net can be obtained continuously and easily without using adhesive.

By means of treatment using the packaging material of this invention using said means, the obtained ham, sausage, etc. have a clear decorative pattern, and the filling operation and

casing operation have a high efficiency. As a result, high-quality ham, sausage, etc. can be obtained using the casing of this invention. This invention thus has a high value in industrial application.

Brief description of the figures

Figure 1 is an oblique cross-sectional view illustrating an application example of the present invention. Figure 2 is a cross-sectional view taken across A-A. Figure 3 is a partially cut oblique view illustrating another application example. Figure 4 is a cross-sectional view taken across B-B.

- 1 Packaging material
- 2 Cloth
- 3 Strings (or net, etc.)
- 4 Cloth

Figures (no change in contents)

Figures 1-4.

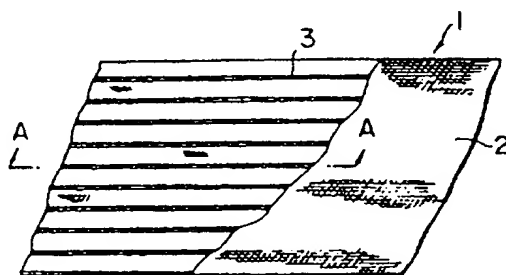


Figure 1

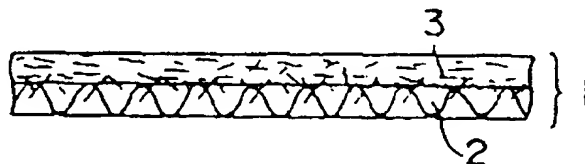


Figure 2

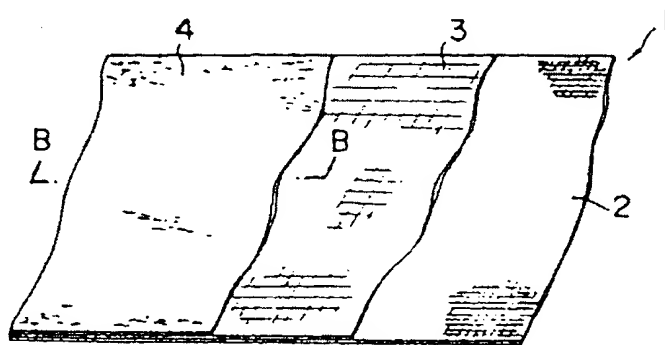


Figure 3

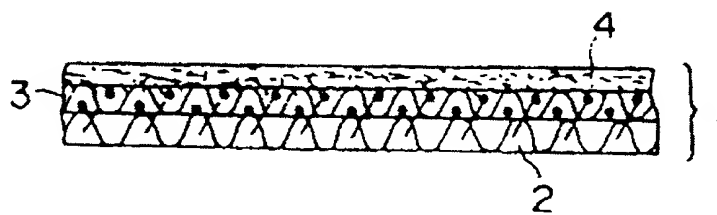


Figure 4